

## DETAILED ACTION

### ***Information Disclosure Statement***

The information disclosure statement filed 09/27/06 is a duplicate of the information disclosure statement filed 06/12/06. The references therein have been considered previously as listed on the first disclosed IDS filed 06/12/06 however the statement dated 09/27/06 has not been signed by the examiner.

### ***Claim Objections***

1. Claims 14-20, 22-29, 34 and 35 are objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim cannot depend from any other multiple dependent claim. See MPEP § 608.01(n). Accordingly, the claims have not been further treated on the merits.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 6 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

2. Claim 6 recites the limitation "different illumination conditions" in line 3. There is insufficient antecedent basis for this limitation in the claim. The examiner believes the applicant to intend to say "provide the different illumination conditions" referring to the said different illumination conditions of claim 3 and as claimed properly in claims 5 and 7-9.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-6, 10-13, 21, and 30-33 are rejected under 35 U.S.C. 102(e) as being clearly anticipated by Frischholz U.S. Patent # 7,027,617.

3. With respect to claim 1, Frischholz discloses a system for preventing fraud in biometric devices comprising:

- Control means for controlling optical radiation incident on a subject's face  
(Figure 2, control unit 30, monitor 26)

- Detecting means for detecting optical radiation reflected at the subject's face  
(Figure 2, camera 28, Col.3, L 36-45)
  - Processing means responsive to the control means for analyzing the reflected  
optical radiation detected by the detecting means to assess whether or not the  
subject's face is that of a real person (Figure 2, evaluator unit 30, Col.3, L 45-  
48, Col.2, L 17-27)
4. With respect to claim **21**, Frischholz discloses a method for preventing fraud in biometric  
devices comprising:
- Causing optical radiation to be incident on the subject's face (Col.3, L 39-43,  
object on monitor = optical radiation)
  - Detecting optical radiation reflected at the subject's face (Figure 2, camera 28,  
Col.3, L 36-45)
  - Analyzing the reflected optical radiation to assess whether or not the subject's  
face is that of a real person (Figure 2, evaluator unit 30, Col.3, L 45-48, Col.2, L  
17-27)
5. With respect to claim **2**, Frischholz discloses all of the limitations as applied to claim 1  
above. In addition, Frischholz discloses:
- Control means includes a controllable optical radiation source (Figure 2, object  
32)

6. With respect to claim **3**, Frischholz discloses all of the limitations as applied to claims 1 and 2 above. In addition, Frischholz discloses:

- Controllable optical radiation source is arranged to direct optical radiation sequentially under different illumination conditions onto the subject's face (Col.2, L 19-25)

7. With respect to claim **4**, Frischholz discloses all of the limitations as applied to claims 1-3 above. In addition, Frischholz discloses:

- The controllable optical radiation source directs optical radiation onto the subject's face under a particular illumination condition, the detecting means detects the optical radiation reflected at the subject's face under the particular illumination condition, the controllable optical radiation source then directs the optical radiation onto the subject's face under a different illumination condition and the detecting means detects the optical radiation at the subject's face under said different illumination condition (Col.2, L 19-25)

8. With respect to claim **5**, Frischholz discloses all of the limitations as applied to claims 1-4 above. In addition, Frischholz discloses:

- The position of said controllable optical radiation source with respect to the subject's face is changed to provide the different illumination conditions (Col.2, L 19-25)

9. With respect to claim **6**, Frischholz discloses all of the limitations as applied to claims 1-4 above. In addition, Frischholz discloses:

- Said controllable optical radiation source is arranged to direct light onto different regions of the subject's face to provide different illumination conditions (Col.2, L 19-25)

10. With respect to claims **10** and **30**, Frischholz discloses all of the limitations as applied to claims 1 and 21 above. In addition, Frischholz discloses:

- Said control means comprises a controllable optical radiation source for illuminating the subject's face and means to direct the subject's gaze in different directions whilst the subject's face is illuminated (Col.2, L 19-25)

11. With respect to claims **11** and **31**, Frischholz discloses all of the limitations as applied to claims 1, 10, 21 and 30 above. In addition, Frischholz discloses:

- Means to direct comprises means to move a shape on a display screen placed in the subject's line of sight (Col.2, L 19-25)

12. With respect to claims **12** and **32**, Frischholz discloses all of the limitations as applied to claims 1, 10, 11, 21, 30 and 31 above. In addition, Frischholz discloses:

- Detecting means detects optical radiation reflected at the subject's face each time the position of the subject's face changes, as the subject's gaze follows the means to direct (Col.2, L 19-25)

13. With respect to claims 13 and 33, Frischholz discloses all of the limitations as applied to claims 1-12, 21, and 30-32 above. In addition, Frischholz discloses:

- The processing means determines whether the subject's face is real by analyzing differences between the reflected radiation detected by the detecting means for each different position of the subject's face as the gaze of the subject changes to follow the means to direct (Col.2, L 19-28)

Claims 1-4 and 7 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Flom et al. U.S. Patent # 4,641,349.

14. With respect to claim 1, Flom et al. discloses an iris recognition system comprising:

- Control means for controlling optical radiation incident on a subject's face (Figure 10, Figure 11, illumination control circuit 170)
- Detecting means for detecting optical radiation reflected at the subject's face (Figure 10, scanning camera 180)
- Processing means responsive to the control means for analyzing the reflected optical radiation detected by the detecting means to assess whether or not the subject's face is that of a real person (Figure 10, processor 190)

15. With respect to claim 2, Flom discloses all of the limitations as applied to claim 1 above.

In addition, Flom discloses:

- Control means includes a controllable optical radiation source (Figure 11, light source 172)

16. With respect to claim 3, Flom discloses all of the limitations as applied to claims 1 and 2 above. In addition, Flom discloses:

- Controllable optical radiation source is arranged to direct optical radiation sequentially under different illumination conditions onto the subject's face (Figure 11, subject's face = eye 10, Figure 5)

17. With respect to claim 4, Flom discloses all of the limitations as applied to claims 1-3 above. In addition, Flom discloses:

- The controllable optical radiation source directs optical radiation onto the subject's face under a particular illumination condition, the detecting means detects the optical radiation reflected at the subject's face under the particular illumination condition, the controllable optical radiation source then directs the optical radiation onto the subject's face under a different illumination condition and the detecting means detects the optical radiation at the subject's face under said different illumination condition (Col.5, L 38-56)

18. With respect to claim 7, Flom discloses all of the limitations as applied to claims 1-4 above. In addition, Flom discloses:

- The intensity of the optical radiation emitted by said controllable optical radiation source is changed to provide different illumination conditions (Col.5, L 24-33)

Claims **1-4** and **8** are rejected under 35 U.S.C. 102(b) as being clearly anticipated by SEAL et al. U.S. Publication 2002/0122572.

19. With respect to claim **1**, SEAL et al. discloses an iris recognition system comprising:

- Control means for controlling optical radiation incident on a subject's face (P.0089, processor)
- Detecting means for detecting optical radiation reflected at the subject's face (P.0048, CCD camera)
- Processing means responsive to the control means for analyzing the reflected optical radiation detected by the detecting means to assess whether or not the subject's face is that of a real person (P.0086, P.0074)

20. With respect to claim **2**, SEAL discloses all of the limitations as applied to claim 1 above.

In addition, SEAL discloses:

- Control means includes a controllable optical radiation source (P.0089)

21. With respect to claim **3**, SEAL discloses all of the limitations as applied to claims 1 and 2 above. In addition, SEAL discloses:



- Controllable optical radiation source is arranged to direct optical radiation sequentially under different illumination conditions onto the subject's face (P.0089, P.0086)

22. With respect to claim 4, SEAL discloses all of the limitations as applied to claims 1-3 above. In addition, SEAL discloses:

- The controllable optical radiation source directs optical radiation onto the subject's face under a particular illumination condition, the detecting means detects the optical radiation reflected at the subject's face under the particular illumination condition, the controllable optical radiation source then directs the optical radiation onto the subject's face under a different illumination condition and the detecting means detects the optical radiation at the subject's face under said different illumination condition (P.0086)

23. With respect to claim 8, SEAL discloses all of the limitations as applied to claims 1-4 above. In addition, SEAL discloses:

- The wavelength of the optical radiation emitted by said controllable optical radiation source is changed to provide different illumination conditions (P.0085, P.0086)

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Flom et al. U.S. Patent # 4,641,349 in view of SEAL U.S. Publication 2002/0122572.

24. With respect to claim 9, Flom discloses all of the limitations as applied to claims 1-4 and 7 above. In addition, Flom discloses:

- The processing means determines whether the subject's face is real by analyzing a difference between the reflected optical radiation detected by the detecting means under the different illumination conditions (Figure 4, compare image step 62)

However, Flom fails to disclose the wavelength of the optical radiation is changed to provide different illumination conditions.

SEAL discloses changing the wavelength to provide different illumination conditions (P.0086).

It would have been obvious to one of ordinary skill in the art at the time the invention was conceived to change the wavelength for different illumination

conditions as in Flom and then compare the differences between the reflected radiation from the subject since the iris and pupil vary depending on illumination (Flom, Col.4, L 63-66) and different wavelengths reach different depths of the eye, or create different images dependent upon the eye color (SEAL, P.0083, P.0086). It would be desirable to analyze a difference between reflected optical radiation under different wavelength illumination conditions in order to ensure proper validation for all eye colors.

### ***Citation***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

- Oda U.S. Patent #6,542,624 discloses an iris code generating device
- Kim et al. U.S. Patent # 7,146,027 discloses an iris recognition system

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to REBECCA C. SLOMSKI whose telephone number is (571)272-9787. The examiner can normally be reached on Monday through Thursday, 7:30 am - 5:00 pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory J. Toatley, Jr. can be reached on 571-272-2059. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Gregory J. Toatley, Jr./  
Supervisory Patent Examiner, Art Unit 2877  
14 April 2008

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